

# Physical and Cognitive Development in Adolescence (ages 11-18)

10/23/2014

- Conceptions of Adolescence
  - Adolescence is the transitional period between childhood and adulthood
    - o Marked by puberty
      - The biological changes that lead to an adult sized body and sexual maturity
  - Social and cultural influences
    - o Demands and pressures differ by cultures
      - Tribal and village societies vs. industrialized societies
- Hormonal Changes in Puberty
  - Growth hormone increase around age 8-9
    - o Increase body size and skeleton
  - Sex hormones (estrogens and androgens) present in both males and females in different amounts
    - o Androgens
      - Testosterone
        - Muscle growth, facial hair, etc.
      - Estrogen
        - Breasts, uterus mature, menstrual cycle to begin
- Sex Differences in Body Growth in Adolescence
  - Add 10-11 inches, 50-75 lbs.

	Boys	Girls
Growth Spurt	Starts age 12.5	Starts age 10
Proportions	Shoulders broaden longer legs	Hips broaden
Muscle-Fat Makeup	Gain more muscle, aerobic efficiency	Gain more fat

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- Sexual Maturation
  - Average 4 year, range 2-6 years
    - o Primary Sexual Characteristics
      - Maturation of the reproductive organs
    - o Secondary Sexual Characteristics
      - Other visible parts of the body that signal sexual maturity
        - Girls: breasts
        - Boys: facial hair, voice change
        - Both: underarm hair, pubic hair
- Individual Differences in Timing of Puberty
  - Heredity
  - Nutrition, exercise
    - o Body fat, leptin in girls
  - SES
  - Race/Ethnicity
  - Family experiences
  - Secular trend
- Adolescent Brain Development

Synaptic pruning continues	Prefrontal cortex	Cognitive Advances: Attention Planning Integrating information Self-regulation
Expansion of Synaptic connections, myelination	Linkages among cortical regions strengthen	
Neurotransmitter response changes	More sensitive to excitatory messages	Increased responsiveness to Stress Pleasure and novelty

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- Sleep Habits in Adolescence
  - Still need almost as much sleep, but go to bed later due to changes in brain regulation of sleep timing
    - o Lack of sleep impairs executive function
      - Lower achievement
      - Increases anxiety, depressed mood
      - High-risk behavior
- Adolescent Moodiness
  - Moderate correlation with hormonal changes
  - Linked more to negative life events
  - Reports of negative mood level off in late adolescence
- Parent-Child Relationships
  - Rise in conflict:
    - o Has adaptive value: psychological distancing
    - o Different views of readiness for responsibility
  - Most conflict is
    - o Mild
    - o Balance by affection, support
- Consequences of Timing of Puberty

	Girls	Boys
Early Maturing	<ul style="list-style-type: none"> <li>• Unpopular, Withdrawn, low confidence</li> <li>• More deviant behavior</li> <li>• Negative body image</li> <li>• More long-term problems</li> </ul>	<ul style="list-style-type: none"> <li>• Popular</li> <li>• Confident, independent</li> <li>• Positive body image</li> </ul>
Late Maturing	<ul style="list-style-type: none"> <li>• Popular</li> <li>• Sociable, lively, school leaders</li> <li>• Positive body image</li> </ul>	<ul style="list-style-type: none"> <li>• Unpopular</li> <li>• Anxious, talkative, attention-seeking</li> <li>• Negative body image</li> </ul>